

# ACCESSORY KIT INSTALLATION INSTRUCTIONS

## ECONOMIZER DAMPER AND HOOD

**MODELS 2EE04710824 / 2EE04710924 / 2EE04711024 / 2EE04711124  
1EH0417 / 1EH0418**

**For 15, 17.5, 20, and 25 ton rooftop units**



**WARNING:** Cancer and Reproductive Harm –  
www.P65Warnings.ca.gov.

### General

This instruction provides the necessary information to field-install economizer dampers and hood assembly on 15, 17.5, 20, and 25 ton single package rooftop units. Table 1 lists the compatible units.

**Table 1: Compatible units**

| Kit                                                                      | Compatible units                            |                                                           |                                                             |                                                |
|--------------------------------------------------------------------------|---------------------------------------------|-----------------------------------------------------------|-------------------------------------------------------------|------------------------------------------------|
| 2EE04710924 (Smart Equipment Economizer)<br>2EE04711124 (BAS Economizer) | ZF 210-300<br>ZJ/ZR/ZT180-300<br>XP 180-240 | ZS -18 through -25<br>ZW/ZK/ZV-15 through 25<br>XA -15-20 | J15ZJ/ZR/ZT<br>J18ZJ/ZF/ZT<br>J20ZJ/ZR/ZF/ZT<br>J25ZJ/ZR/ZF | ZS T18, T25<br>ZW/ZK/ZT T15, T25<br>XAT15, T20 |
| 2EE04710824 (Smart Equipment Economizer)<br>2EE04711024 (BAS Economizer) | ZF180                                       | ZS-15                                                     | J15ZF                                                       | ZST15                                          |

The damper accessory provides the return air and outdoor air dampers and actuator for economizer operations. This kit contains all rain hood components.

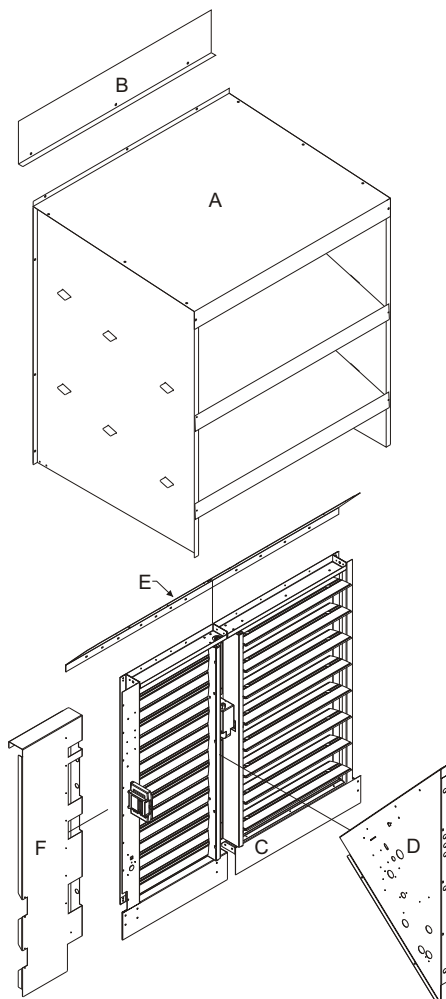
Table 2 lists the kit contents. Verify the contents of the kit before you begin the installation. See Figure 1 for the item locations.

**Table 2: Economizer kit contents**

| Item | Quantity | Description                                   |
|------|----------|-----------------------------------------------|
| A    | 1        | Fresh air hood with three filters             |
| B    | 1.       | Fresh air adapter panel (20 and 25 ton units) |
| C    | 1        | Economizer damper                             |
| D    | 1.       | Re turn air/out door air (RA/OA) divider      |
| E    | 1        | Top flange                                    |
| F    | 1        | Damper extension (20 and 25 ton units)        |
|      |          | Bag of screws                                 |

### Required tools

- 5/16 in. hex socket driver
- 7/16 in. hex socket driver
- 3/8 in. hex socket driver
- Drill for self-drilling screws
- Socket drive extension
- Hammer



**Figure 1 - Item locations**

## Installation

The following sections outline the installation procedures. Read all the instructions before you begin the installation.

### Installing the economizer damper

#### **CAUTION**

When you install dampers, use care to avoid damage to filters or coils located in the adjacent compartment.

1. Remove the four access panels. Two outdoor air (OA) panels, one return air (RA) panel, and one filter panel. See Figure 2.
  - a. Use a 7/16 in. hex socket to loosen the screws that secure the rotating latches.
  - b. Use a 5/16 in. hex socket to remove the four screws on the bottom of each panel. See Figures 2, 3, and 4.

**Note:** Retain the O rings that provide the seal between the panel and unit bottom.

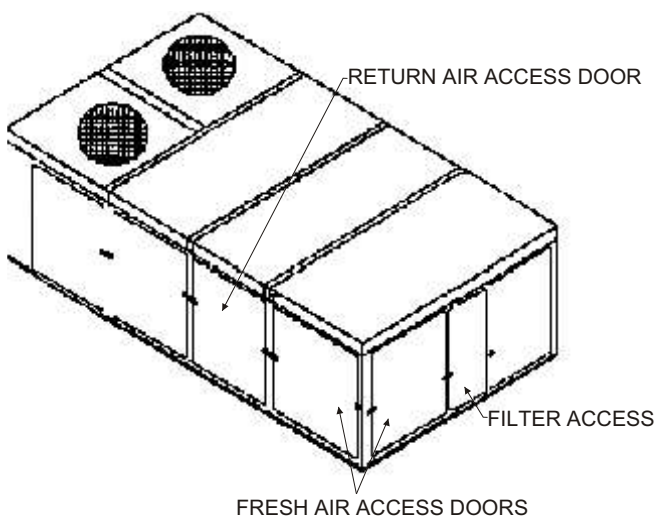


Figure 2 - Access panels

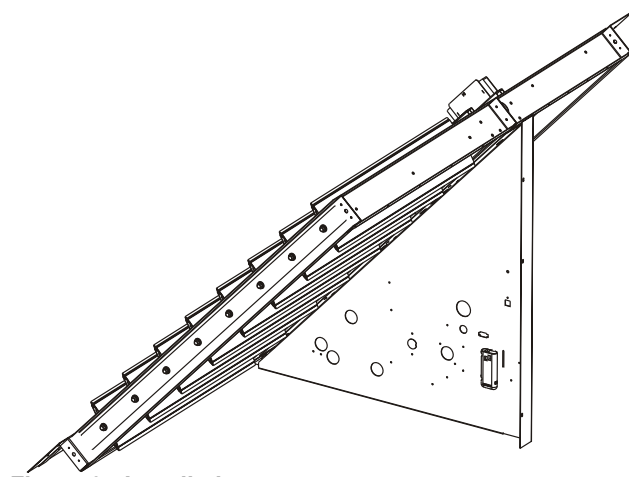


Figure 3 - Installed components

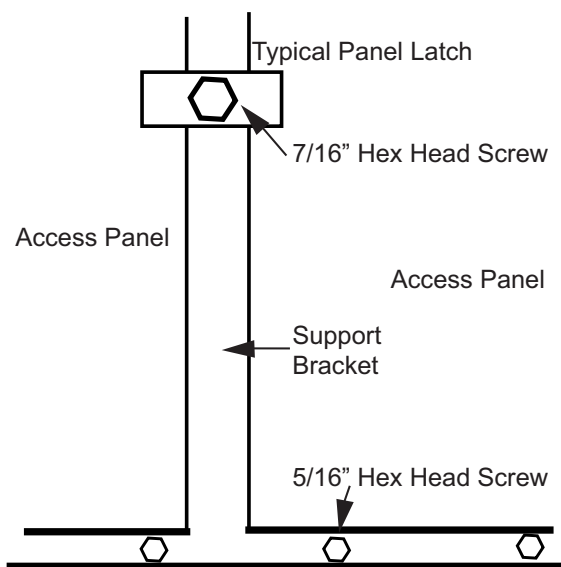


Figure 4 - Panel latch

#### **WARNING**

If the return air duct cover is not in place, install a covering over the open hole to prevent personal injury or equipment damage.

2. On 20 and 25 ton rooftop units: Remove the support brackets. See Figure 5.
  - a. Use a 5/16 in. hex socket to remove the top screws that secure the support bracket located between the return air and outdoor air compartments.
  - b. Use a 5/16 in. hex socket to remove the top screws that secure the corner support bracket.
  - c. Use a 3/8 in. hex socket to remove the two inside top and bottom screws. Save the screws and bracket for later use. See Figure 6.

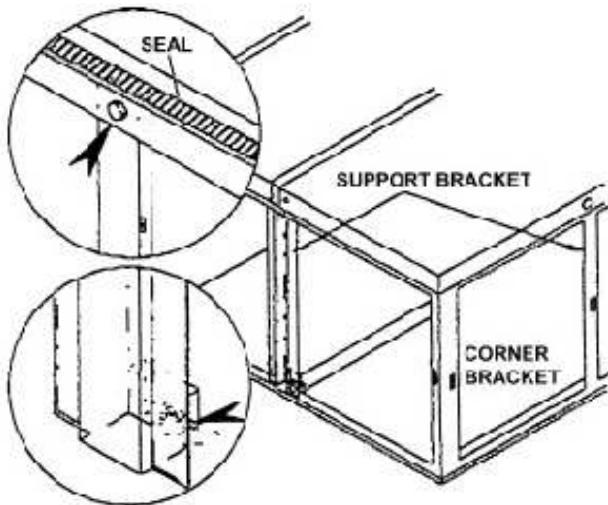


Figure 5 - Removing the support bracket

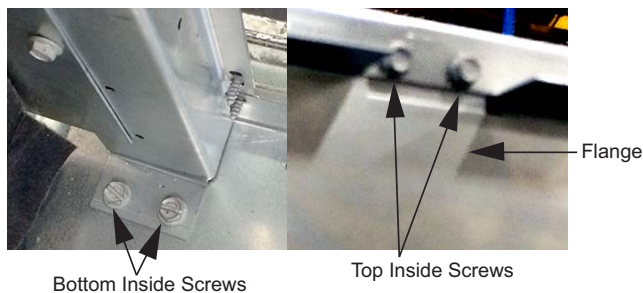


Figure 6 - Top and bottom inside screws

**CAUTION**

Lift the roof when you remove the support bracket to prevent tearing the roof seal.

3. If in place, remove the RA duct panel that covers the RA opening. See Figure 7.

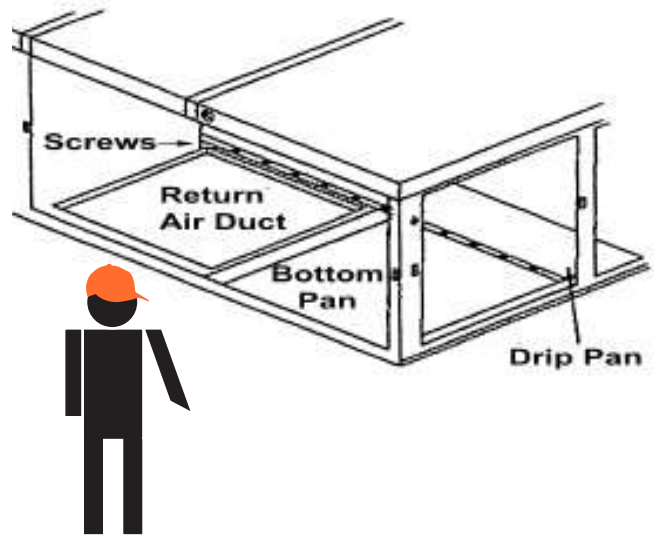


Figure 7 - RA duct and screw locations

4. Install the top flange.
  - a. Inside the top lip, align the holes of the top flange with the holes in the lip.
  - b. Use the self-drilling screws provided to secure the top flange to the lip. Install the screws from outside the unit. See Figure 8.

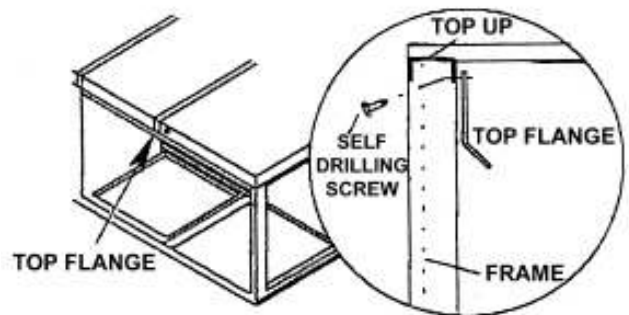
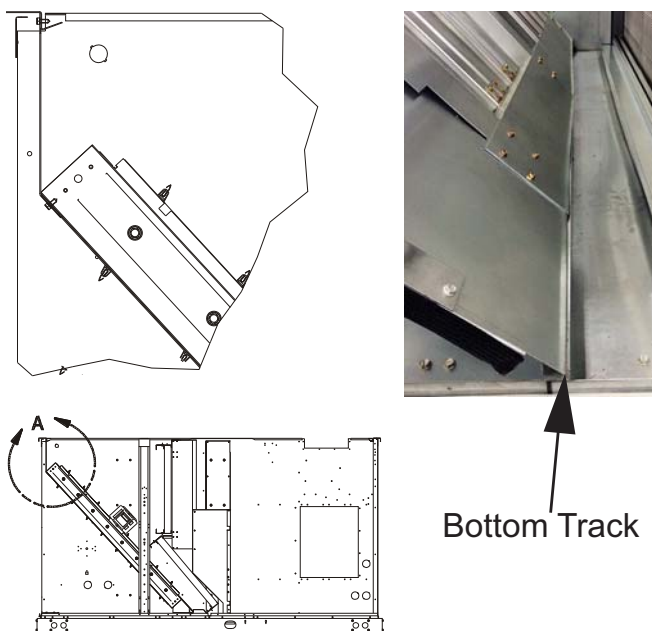


Figure 8 - Installing the top flange

5. Position yourself in front of the unit with the OA section on your right and RA section on your left. See Figure 7.
6. Lay the economizer damper down with the economizer control board and actuator on top. Place the end of the damper beyond the bottom track to the filters racks.
7. Lift the economizer damper up past the top flange and pull the bottom of the damper into the bottom track. Rest the damper on the top flange. See Figure 9.
8. Fasten the damper to the top flange using the pilot holes and self-drilling screws provided. See Figure 9.

You do not need to fasten the damper to the bottom track.



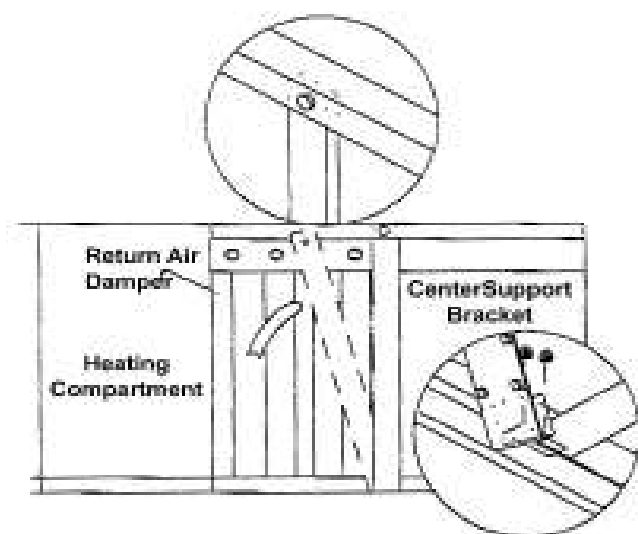
**Figure 9 - Securing the damper to the top flange**

9. On 20 and 25 ton units: install the two support brackets previously removed. See Figure 10.

### **CAUTION**

Lift the roof when you remove the support bracket to prevent tearing the roof seal.

- Align the bottom holes, lift the roof, and rotate the bracket to a vertical position.
- Use the screws previously removed from each bracket to secure.

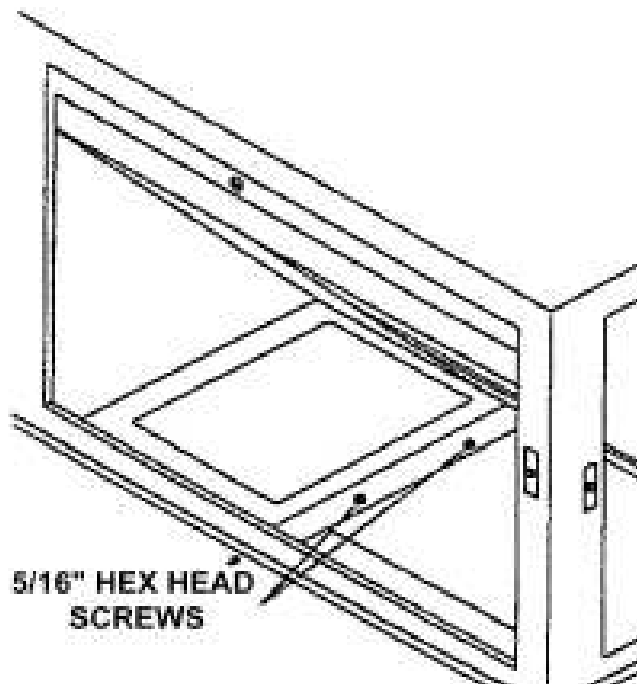


**Figure 10 - Re-installing the center support bracket**

10. Secure the economizer damper:

- Measure and cut a length of 1/8 in. foam tape to fit the long edge of the damper frame that rests against the access panel. See Figure 15.

11. Use a 5/16 in. driver to remove the two screws located in the floor flange between the RA and OA compartments. Save the screws for later use. See Figure 11.



**Figure 11 - Flange screws**

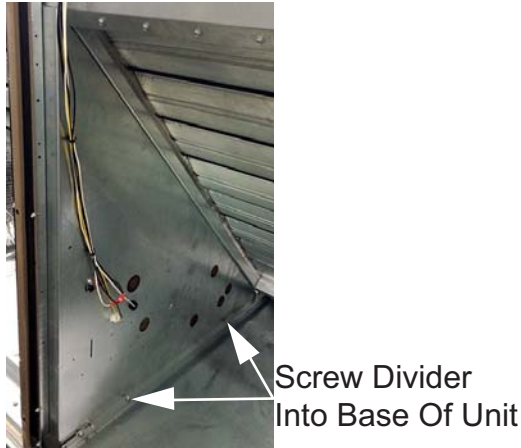
12. Install the RA/OA divider:

- Remove the RA/OA divider from its packing material.
- Measure and cut a length of 1/8 in. foam tape to fit on the diagonal edge of the RA/OA divider. See Figure 12.



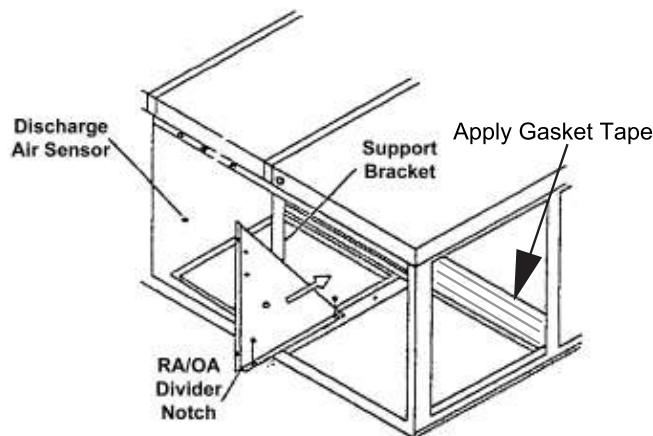
**Figure 12 - Applying foam tape to the divider**

- c. Slide the divider into position against the economizer damper. Place the divider the right side of the support bracket.
- d. Use the two screws removed previously to secure the RA/OA divider to the floor flange. See Figure 13.



**Figure 13 - Attaching the divider to the base**

- e. Use two self-drilling screws to secure the OA/RA divider to the support bracket. See Figure 14.
- f. Use four self-drilling screws to secure the RA/OA divider to the economizer damper frame using the pilot holes provided.
- g. Fill the gap at the base of the divider with the  $\frac{3}{4}$  in. foam tape provided.



**Figure 14 - Installing the divider**

- h. On single enthalpy units: mount the enthalpy sensor to the metal surface on the RA/OA divider.

On dual enthalpy units: mount the second enthalpy sensor on the opposite surface in the return air. Use two self-tapping screws to secure. See Figure 17.



**Figure 15 - Installing cable assemblies**

13. Mount the sensor and wire harness. For BAS economizers (2EE04711024 and 2EE04711124) skip step 13 and continue with step 14.
  - a. Cut the wire tie that secures the cable harness to the damper.
  - b. Insert the P27/4 pin, S28/3, S30/2 pin, and S31/2 pin connector to the unit economizer plug near the filters.
  - c. Uncoil the remaining wiring harness and route it through the round hole in the top flange. Allow the wires to hang in the OA compartment. See Figure 18 for wiring grommet locations.
  - d. Make all the wiring connections listed in Table 3.
  - e. Locate the discharge air sensor mounting location on the heating section wall. Mount the sensor bracket provided with one self-tapping sheet metal screw. See Figure 17.
  - f. Use tie wraps to bundle the wires and secure to the top flange and RA/OA divider. See Figure 15.

**Important:** When using the wire harness, insert a loop between the two tie wraps so that the wire harness does not rub on the damper frames during operation. See Figure 16.



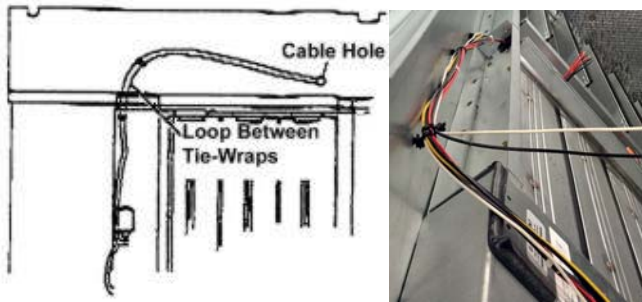


Figure 16 - Routing cables

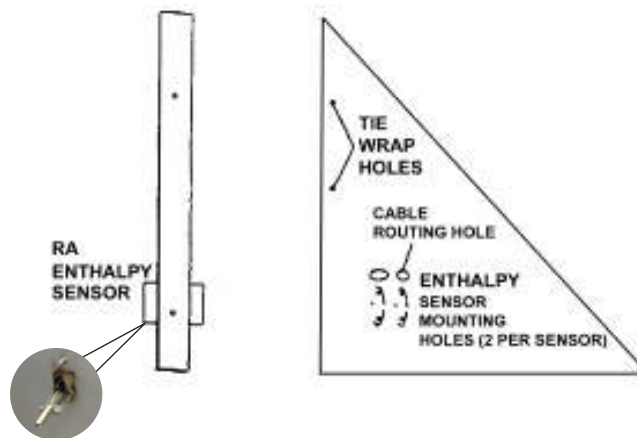


Figure 17 - Component location on RA/OA

Table 3: Sensor connection table

| Sensor type (terminal) | All units (wire color)                  | Terminal location  | Logic module |
|------------------------|-----------------------------------------|--------------------|--------------|
| OAH                    | Field supplied                          | 24V OAH Com        | Eco Board    |
| RAH                    | 823 / Red<br>825 / White<br>824 / Black | TB4-3 RAT+<br>RAT- | UCB          |
| SAT                    | 371 / White<br>373 / Black              | SAT+<br>SAT-       | S27          |
| RAT                    | 375 / White<br>377 / Black              | RAT+<br>RAT-       | S27          |
| SA BUS                 | 896 / Black<br>895 / White<br>894 / Red |                    | S28          |
| PWR                    | 355 / Brown<br>356 / Red                |                    | S30          |
| DMP ACTUATOR           | 355 / Brown<br>356 / Red                |                    | S30          |

Table 3: Sensor connection table

|        |                           |  |     |
|--------|---------------------------|--|-----|
| EX FAN | 362 / Brown<br>360 / Gray |  | S31 |
|--------|---------------------------|--|-----|

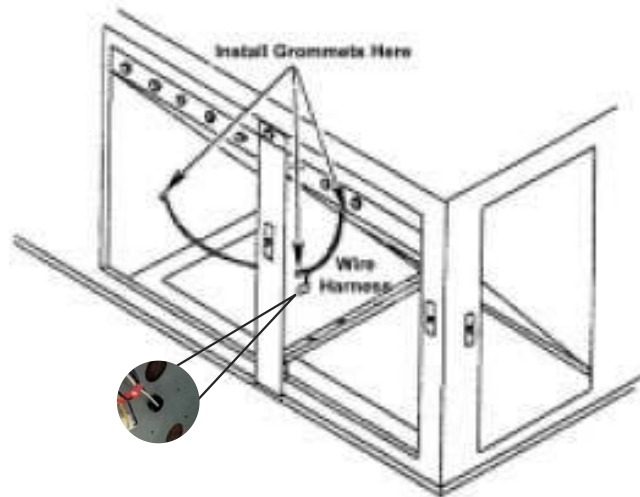


Figure 18 - Grommet Installation Locations

14. For 20 and 25 ton units only:
  - a. Remove the blank-off section from the packaging.
  - b. Measure and cut a length of 1/8 in foam tape to fit on the long edge of the blank-off section that contacts the access panel.
  - c. Insert the blank-off section through the side access opening of the OA compartment. See Figure 19.
  - d. Use the pilot holes on the top flange for the self drilling screws provided to secure the top of the blank-off section to the top flange.
  - e. Install 3/4 in. foam tape around the cut-out for the vertical support bracket.

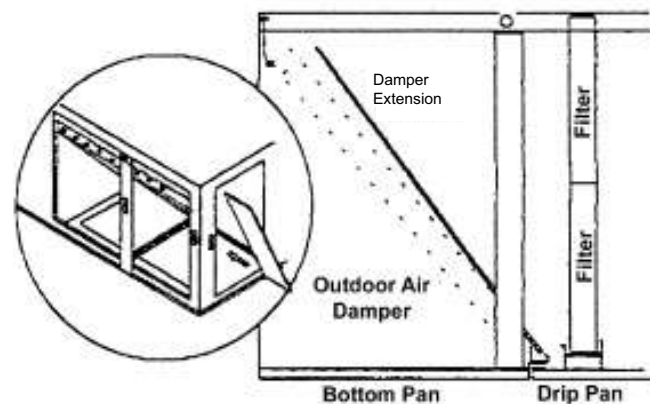


Figure 19 - Installing the damper extension

The damper assembly is complete. Proceed to *Assembling the economizer hood* on page 7.

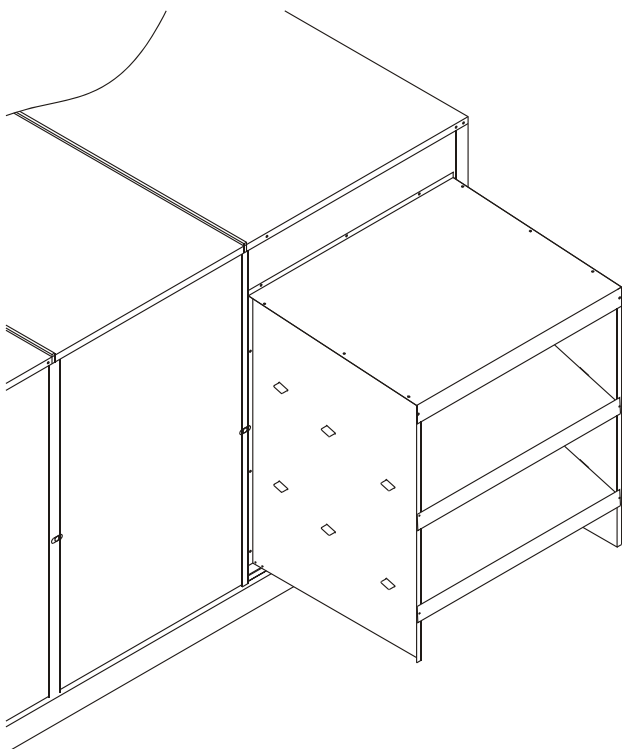
### Assembling the economizer hood

Read all the instructions before you assemble the economizer hood.

#### CAUTION

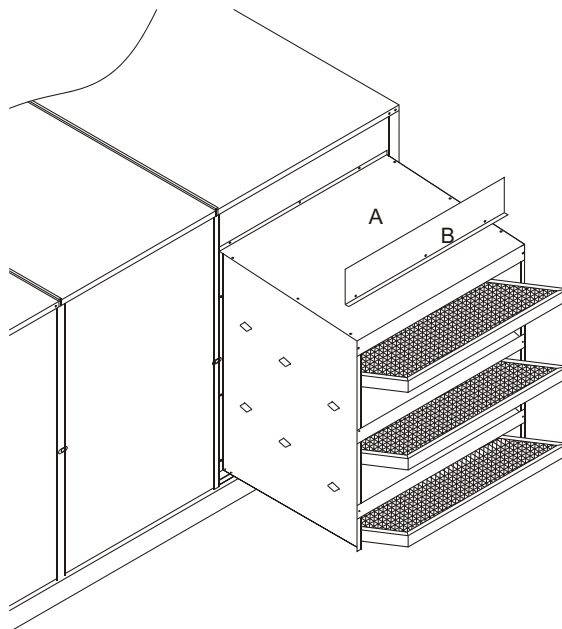
Take care when using cordless drivers so that the screws do not strip the metal take holes.

1. Take the fresh air access door with hood assembly and place it back in position.
2. Secure the assembly in place with the hardware provided. See Figure 20



### Figure 20 - Installing the assembled fresh air hood

3. On 20 and 25 ton units: Install the fresh air adapter panel under the unit top panel and over the flange of the fresh air hood top. See Figure 21.
4. Secure the adapter panel with the two 10-½ in. x 16 screws provided.



| Item | Description             |
|------|-------------------------|
| A    | Fresh air hood top      |
| B    | Fresh air adapter panel |

Figure 21 - Installing the adapter panel